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To the House Resource Committee
Subcommittee on Forests and Forest Health

Developing Biomass Potential: Turning Hazardous Fuels into Valuable Products
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Good afternoon Mr. Chairman. My name is Peter Johnston and I am the Manager for Technology Development for Arizona Public Service (APS), an electric utility based in Phoenix Arizona, and I appreciate the opportunity to testify today.

APS is the largest electric utility serving the state of Arizona and is currently working to generate 1.1% of its retail electricity from renewable resources by the year 2007 in accordance with the state's Environmental Portfolio Standard (EPS). My department has been tasked with achieving that goal and has already completed a number of electricity generation projects from renewable energy sources located in the state.

As part of our program, we have completed an assessment of the renewable resources in the state and determined that after our most abundant resource, solar energy, and potentially, wind energy, biomass is the largest resource that APS can use towards meeting the EPS requirement.

We estimate that the ponderosa pine forests and pinon and juniper populated woodlands can support an electric generating capacity of between 250 and 500 MW. To that end APS has already funded the construction of a 3 MW biomass power plant that came on-line in February 2004 in Eagar, in Eastern Arizona. This plant is now generating electricity from the forest residues from the Wildland Urban Interface initiatives associated with the Apache Sitgreaves forest. We are currently in the process of constructing a second 3 MW biomass plant that should be completed in early 2005 in Snowflake AZ and we are actively seeking additional plants to add to our biomass portfolio.

The cost of electricity generated from these plants is very dependent on the proximity of the fuel source to the plant and we have identified 12 locations in the state where electric generating facilities of between 3 MW and 40 MW could be sensibly built with good access to forest residues and electrical transmission infrastructure. Eagar and Snowflake are two of those identified locations.

The cost of electricity from these plants will be approximately 2 to 3 times that of electricity generated from a more conventional 300 MW or so natural gas fueled plant. This is due to a number of reasons relating to the relative size of the biomass units, however, the cost of the biomass fuel is a significant operating expense for a biomass power plant. A typical cost of biomass fuel is in the range of $10 to $40 per ton. In the case of the Eagar plant, for example, the fuel cost is just under $10 per ton and constitutes 20% of the annual Operating and Maintenance costs of the plant. The resulting cost of energy from Eagar is 7.68 c/kWh. If the fuel cost increased towards the top limit of $40 per ton, the energy cost would increase to more than 12 c/kWh. Naturally, APS would prefer the lower cost of energy to make the plant more competitive with other renewable resource opportunities. The cost of fuel can be reduced if a third party operation, which creates added value from the wood feedstock, can be sited at the power plant site and associated with the power plant operation.

Such an operation could be a fabricator of glulam boards for example, which makes construction boards from small diameter forest thinning material. The product from this plant has its own market value and the waste material from the plant's operation can be disposed of as the fuel feedstock for the electric generating plant. Additionally, process heat required for the glulam operation can be provided by the power plant thus saving the glulam plant operator the expense of constructing and operating a heating system . A symbiosis of this nature can actually result in a negative fuel cost for the power plant and the combination of the two operations can make the disposal of waste material leaving the forest profitable and ultimately enhance the

economic development of the predominantly rural areas where the plants would be located.

APS is pursuing operating partnerships with several small diameter wood product companies in order to minimize the cost of electricity production from existing and future biomass power plants. The progress of these activities has been hindered by the uncertainty of a feedstock supply to the wood product companies. In order to finance their operations a feedstock availability of at least ten years is generally required and although recently awarded stewardship contracts can provide some level of that certainty, no such contracts have been released in Arizona to date. It is imperative for the successful deployment of small diameter wood product operations and additional biomass power plants in Arizona that the owners of these operations know that they will have access to a feedstock/fuel supply for at least ten years into the future.

Until such wood product companies are able to commence operations, residues from forest health operations can be collected and hauled to biomass power plants for conversion into electricity. As indicated above, the cost of electricity generated from a biomass plant is sensitive to the cost of fuel. Since fuel can be produced in areas not necessarily close to the power plants that exist or being planned today a Fuel Subsidy for hauling companies, as originally made available in HR2646, can have a decisive influence on the success or failure of the power plant as such subsidies can be used to moderate the cost of fuel hauled to the plant.

APS would like to continue to expand the number of biomass power plants in Arizona. Not only will they assist APS in meeting their EPS requirements but they will also provide a means of disposing of residues resulting from the healthy forest initiatives and provide economic development opportunities in the state. An added benefit resulting from the presence of these power plants will be a means of disposing of the more than 8,000 tons per month of urban green waste material that is currently disposed of in landfills in Arizona. Burning the waste in a controlled manner in a boiler will be an improvement over filling landfills. However, in order to achieve this expansion, the cost of the renewable electricity generated from these plants will have to be competitive with other renewably sourced electricity. The association or partnership of a biomass power plant with a value added operation will greatly facilitate this expansion.

We recognize that there are many factors that can influence the development and success of biomass to energy power projects some of which can be instigated at the federal level. APS would therefore encourage the following actions:

1. Congress should continue to provide funding to the Forest Service programs as proposed in the current Forest Health bill.

2. Encourage the National Forest Service to continue long term NEPA preparations and issue Forest Stewardship contracts as soon as possible.

3. Continue to support community involvement in the issuance and approval of Forest Stewardship contracts.

4. Until such Stewardship contracts are forthcoming re-activate the availability of a Fuel Subsidy program.

APS is committed to developing clean, renewable energy sources today that will fuel tomorrow’s economy. We see biomass as a viable component of our renewable energy portfolio. We also recognize that virtually all renewable energy projects require some form of financial subsidy to make their economics work. Fortunately APS is able to pay a premium for the electricity produced from renewable sources through the Environmental Portfolio Standard program. However, we are also cognizant of the fact that our program is open to the scrutiny of our regulators and our customers who expect our expenditures to be made prudently.

Turning Hazardous Fuels into Valuable Products has the potential to provide new job opportunities, local economic development and the creation of healthy forests for everyone’s benefit. APS will continue to pursue renewable biomass energy ventures and looks forward to the cooperation and support from all parties to make those ventures successful.

This concludes my prepared testimony. Once again I appreciate the opportunity to speak before you today and will be glad to answer any questions you or the subcommittee might have.